

## REMARKS

Claims 1-32 are currently pending in this application. Claims 29-32 are newly added claims which are supported by the specification (e.g., see page 7).

Applicant respectfully requests reconsideration of this application in view of the remarks set forth below.

### Response to Arguments

The Examiner stated that the use of the Engleson (US 5,599,492) reference was to provide evidence that the use of the tapered section with a distal plunge-ground length is old in the art. The Examiner further stated that the "Background of the Invention" section (Col. 1, lines 41-51) of Engleson teaches as old that the tapered guidewire increases flexibility, regardless of any drawbacks, and that is the motivation to combine the teachings.

Applicant respectfully disagrees with the Examiners reasoning that the Engleson reference provides a proper motivation to combine. It is well known that references to be combined must be considered in their *entirety*, including disclosures that teach away from the claims. The paragraph (Col. 1, lines 52-63) immediately following the paragraph cited by Examiner disclaims the construction of the prior art. Applicant respectfully submits that Engleson clearly discredits and teaches away from the paragraph cited by Examiner, therefore Engleson cannot provide the proper motivation to combine the references as asserted by the Examiner.

### Claim Rejections - 35 U.S.C. §103(a)

The Examiner rejected claims 1-9, and 22-25 under 35 U.S.C. 103(a) as being unpatentable over Tenerz et al. (US 4,941,473) in view of Engelson. Applicant respectfully disagrees with the basis of this rejection.

Engelson clearly teaches away from any such combination as clearly shown above. Furthermore, even if combined, any such combination lacks all of the Applicant's claim limitations as shown below.

Claim 1

Claim 1 requires at least one optical fiber disposed through the therapeutic guidewire, the optical fiber configured to *provide* diagnostic information from at least one of before, during, and after treatment.

Tenerz teaches that the optical fiber is solely configured to relay signals from a pressure sensor. Thus, Tenerz teaches the pressure sensor provides pressure information and the optical fiber is merely a means to transmit signal:

*"The present invention solves this and associated problems by the use of a miniaturised sensor placed near the distal end of the guide wire (the end nearest the sampling location), the signal transmission from the sensor taking place optically via an optical fibre built into the leader."* (Tenerz, col. 1, lines 43-48)

Applicant respectfully submits that if the optical fiber in Tenerz were modified to provide diagnostic information before, during, and after treatment, it would render the Tenerz reference unsatisfactory for its intended purpose. In particular, modification of the Tenerz fiber to provide information would logically result in the severing of the optical fiber (3) from the pressure sensor (1), thus rendering the Tenerz reference unsatisfactory for its intended purpose, i.e., measuring pressure. At the very least this modification would change the basic principle under which the Tenerz construction was designed to operate. It is well known that if a combination of references to support an obviousness rejection renders a reference unsatisfactory for its intended purpose, then no proper motivation to combine exists. Moreover, it is well known that modifications to a reference which change its basic principle of operation are not prima facie obvious.

### Claim 2

Claim 2 requires at least one optical fiber is exposed within a vasculature of a patient at least at one location along the therapeutic guidewire. The references do not possess this claim limitation, and the Examiner has not cited it.. Accordingly, Applicant respectfully submits that based on this alone, this rejection is improper. Furthermore the proposed modification would render Tenerz unsatisfactory for its intended purpose.

Tenerz teaches a pressure sensing catheter, which requires an internal air gap for differential pressure measurements between atmosphere and a patient's body:

*"A distinguishing feature characteristic for the guide wire and essential to its function is that there is a space 7 between the fibre 3 and the metal tube 6, this space constituting a ventilation duct for the pressure sensor 1."*

(Tenerz, col. 2, lines 56-59, bolding added)

Plainly, if the optic fiber were exposed to vasculature then the air gap would cease to exist making pressure differential measurements impossible, and thus rendering Tenerz unsatisfactory for its intended purpose. Applicant notes this argument applies to claim 16 as well.

### Claim 3

Claim 3 requires at least one optical fiber is configured to sense vessel and blood characteristics. The references do not possess this claim limitation, and the Examiner has not cited it. Accordingly, Applicant respectfully submits that based on this alone, this rejection is improper.

As detailed above in the claim 1 argument, Tenerz teaches that the optical fiber is solely configured to relay signals from a pressure sensor. Thus the key claim limitation is lacking. Applicant also believes this modification would render Tenerz unsatisfactory for

its intended purpose and change its principal of operation. Applicant notes this argument applies to claims 6 and 22 as well.

#### Claim 4

Claim 4 requires that the measurement capabilities of the claimed apparatus include thermal parameters of the vasculature. The references do not possess this claim limitation, and Examiner has not cited it. Accordingly, Applicant respectfully submits that based on this alone, this rejection is improper. Applicant notes this argument applies to claims 17, 23, and 25 as well.

#### Claim 8

Claim 8 requires at least one optical fiber is movable within the therapeutic guidewire. The references do not possess this claim limitation, and Examiner has not cited it. Accordingly, Applicant respectfully submits that based on this alone, this rejection is improper. Furthermore the proposed modification would render Tenerz unsatisfactory for its intended purpose.

The optical fiber as taught by Tenerz is secured to the pressure sensor (1) which is in turn secured to the distal end of the catheter via welding or brazing (Tenerz, col. 2, lines 39-41). If the optic fiber were made moveable, Applicant believes these connections could not be maintained. This is especially relevant considering an internal air ventilation space (7) is essential in order for the Tenerz device to function and Tenerz does not teach a moveable seal.

The Examiner rejected claims 11-17, and 19-24 under 35 U.S.C. 103(a) as being unpatentable over Tenerz et al. in view of Engelson, and in further view of Jafari and Hurtak et al of record. Applicant respectfully disagrees with this rejection.

As shown above Tenerz and Engelson are not combinable with regards to the base claims, which the addition of Jafari and Hurtak does not remedy. Applicant notes that Engelson (Col.1, lines 52-63) also teaches away from the construction of Jafari (fig. 1).

Claim 24

Claim 24 requires that light signals are transmitted to the desired location in the vasculature and reflected light signals are collected by the data processing system. None of the references possess this claim element. Accordingly, Applicant respectfully submits that based on this alone, this rejection is improper.

Furthermore, as outlined above, Applicant believes this modification would render the Tenerz reference unsuitable for its intended purpose, because it would logically result in the severing of the optic fiber from the pressure sensor.

New claims 29-32 include limitations which are clearly not described in the references and are therefore patentable.

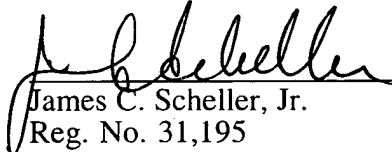
Applicant respectfully submits that in view of the arguments set forth herein, the rejections herein have been overcome. Accordingly, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

Please charge any shortages and credit any overcharges to our Deposit Account No. 02-2666.

Respectfully submitted,

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